

We claim:

1. A method for reducing the severity of a bone fracture in a subject, the method comprising administering to a site of said bone fracture in said subject a therapeutically effective amount of an agent that inhibits activity or expression of a BMP-3 polypeptide.

2. The method of claim 1, wherein said agent is an anti-BMP-3 antibody.

3. The method of claim 2, wherein said antibody is a monoclonal antibody.

4. The method of claim 3, wherein said monoclonal antibody is a human monoclonal antibody or a humanized monoclonal antibody.

5. The method of claim 1, wherein said agent is an anti-BMP-3 antisense RNA.

6. The method of claim 1, wherein said subject is a human.

7. The method of claim 1, wherein said agent is administered systemically to said subject.

8. The method of claim 7, wherein said administration is intravenous.

9. The method of claim 1, wherein said agent is administered locally to said site.

10. The method of claim 9, wherein said agent is administered by intraosseous injection.

11. The method of claim 1, wherein said agent is administered in conjunction with a matrix.

12. The method of claim 1, wherein said agent is administered along with a carrier.

13. The method of claim 12, wherein said carrier comprises a collagen gel, hyaluronate, alginate, calcium phosphate, polyol, or demineralized bone matrix.

14. The method of claim 1, wherein said agent is administered in a matrix.

15. The method of claim 15, wherein said matrix comprises collagen, fibrin tissue, an endoneural sheath.

16. The method of claim 15, wherein said matrix is porous.

17. The method of claim 1, wherein said agent is administered along with an osteogenic polypeptide.

18. The method of claim 17, wherein said osteogenic polypeptide is BMP-2.

19. The method of claim 1, wherein said bone is metaphyseal bone.

5 20. The method of claim 19, wherein said metaphyseal bone is primal femur, proximal humerus, distal radius or vertebral body.

21 A method for reducing the incidence of a bone fracture in a subject, the method comprising administering to a site at risk of bone fracture in said subject a therapeutically effective amount of an agent that inhibits BMP-3 activity.

10 22. A method for treating osteoporosis in a subject, the method comprising the method comprising administering to said subject therapeutically effective amount of an agent that inhibits BMP-3 activity in said host.

23. A pharmaceutical composition comprising a pharmaceutically acceptable carrier and an agent that, when introduced into a host, results in inhibition of expression of a BMP-3 gene or activity of a BMP-3 polypeptide in said host.

24. The pharmaceutical composition of claim 23, wherein said agent is a nucleic acid that inhibits expression of a BMP-3 gene in said host.

25. The pharmaceutical composition of claim 23, wherein said agent is a BMP-3 antibody.

20 26. The pharmaceutical composition of claim 23, further comprising a carrier.

27. The pharmaceutical composition of claim 23, further comprising a matrix.

28. A method of preventing unwanted bone growth in a subject, the method comprising administering to said subject an agent that increases activity of BMP-3 in said host.

29. The method of claim 28, wherein said agent is a BMP-3 nucleic acid.

25 30. The method of claim 28, wherein said agent is a BMP-3 polypeptide.

31. The method of claim 30, wherein said BMP-3 polypeptide is a recombinant BMP-3 polypeptide.

32. A method of antagonizing BM P-2 activity in host, the method comprising administering to said subject an agent that increases activity of BMP-3 in said host.

33. A pharmaceutical composition comprising a pharmaceutically acceptable carrier and an agent that, when introduced into a host, results in increased activity of BMP-3 in said
5 host.

34. A method for identifying a promoter of bone growth, the method comprising contacting a BMP-3 polypeptide with a test compound; and
determining whether said test compound inhibits the function of said BMP-3 polypeptide, thereby identifying a promoter of bone growth.

10 35. A method for identifying an promoter of bone growth, the method comprising contacting a BMP-3 nucleic acid with a test compound; and
determining whether said test compound binds to said BMP-3 nucleic acid, thereby identifying an inhibitor of bone growth.

36. The method of claim 35, further comprising determining whether said compound inhibits expression of a BMP-3 nucleic acid.

37. The method of claim 36, further comprising determining whether said compound inhibits transcription of a BMP-3 nucleic acid.

38. The method of claim 36, further comprising determining whether said compound inhibits translation of a BMP-3 nucleic acid.